

I. Amendments to the Claims

This listing of claims replaces without prejudice all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A wireless local loop system comprising:

a network utilization manager;

at least one base station including an antenna, a radio, a modem, and a communication system; and

a plurality of subscriber stations, each including an antenna, a radio unit, and modem to exchange information with said at least one base station, at least two subscriber communications ports and a subscriber utilization client operable with said network utilization manager to assign capacity in said system to at least one of said two subscriber communications ports to create a desired connection between said base station and said at least one subscriber communication port,

wherein each said subscriber station is configured to request said network utilization manager to establish a connection to said at least one subscriber communication port, said network utilization manager determining both a required data rate and a desired data rate for said

connection from said request, and

wherein monetary charges associated with said
connection differ according to whether said connection is
established at said required data rate or said desired data
rate.

Claims 2-3. (Cancelled).

4. (Currently Amended) The wireless local loop system as claimed in ~~claim 2~~ claim 1 wherein said network utilization manager further determines at least one QoS level required for said connection.

5. (Currently Amended) The wireless local loop system as claimed in ~~claim 2~~ claim 1 wherein said network utilization manager further determines both at least one QoS level required for said connection and at least one QoS level desired for said connection from said request.

Claim 6. (Cancelled).

7. (Original) The wireless local loop system as claimed in claim 5 wherein monetary charges associated with said connection differ according to whether said connection is established at said at least one required QoS level or said at least one desired QoS level desired for said

connection.

8. (Original) The wireless local loop system as claimed in claim 1, wherein said base station is connected to a public switched telephone network via a PSTN gateway.

9. (Original) The wireless local loop system as claimed in claim 8 wherein said base station is connected to said PSTN gateway via a backhaul connection.

10. (Currently Amended) The wireless local loop system as claimed in ~~claim 1~~ claim 23, wherein said switch and router in said base station ~~is~~ are connected to a packet network via a backhaul connection.

11. (Currently Amended) The wireless local loop system as claimed in claim 1 wherein at least one of said at least two subscriber communications ports comprises ~~is~~ a data communication port.

12. (Currently Amended) The wireless local loop system as claimed in claim 11, wherein data communication port comprises ~~is~~ an Ethernet port.

13. (Currently Amended) The wireless local loop system as claimed in claim 11, wherein said data

communication port comprises ~~is~~ a radio port for communication with radio-enabled devices adjacent said subscriber station.

14. (Original) The wireless local loop system of claim 11 comprising at least two telephony ports in addition to said data port.

15. (Currently Amended) The wireless local loop system of claim 14 wherein one of said at least two telephony ports comprises ~~is~~ a data port for data modulated in the voice band.

16. (Original) The wireless local loop system as claimed in claim 1 including a prioritization table for at least one of said plurality of subscriber stations, and at least one of said subscriber utilization client in said subscriber station and said network utilization manager employing said prioritization table when assigning capacity to said at least one subscriber communications port in said at least one subscriber station.

17. (Currently Amended) The wireless local loop system as claimed in claim 16, wherein information in said ~~priority~~ prioritization table is downloaded to said subscriber station from said base station.

18. (Currently Amended) The wireless local loop system as claimed in ~~claim 1~~ claim 23 herein said switch and router ~~is~~ are operable to establish connections between subscriber stations serviced by the same base station.

19. (Currently Amended) The wireless local loop system as claimed in ~~claim 1~~ claim 22 wherein said base station comprises at least two sectors, each sector including an antenna, a radio, a modem, and wherein said antenna is directional to define a reception footprint for each respective sector substantially different from the reception footprint of each other sector, each sector communicating with said router and wherein said network utilization manager manages and assigns resources on a per sector basis.

20. (Original) The wireless local loop system as claimed in claim 1 including at least two base stations and wherein said network utilization manager is implemented in a distributed manner on at least two of said at least two base stations.

21. (Original) The wireless local loop system as claimed in claim 10 and further including at least one network management center connected to said at least one base station via said backhaul, said network utilization manager

being implemented in a distributed manner on said network management center and said at least one base station.

22. (Original) The wireless local loop system as claimed in claim 1 wherein said communication system comprises a router.

23. (Original) The wireless local loop system as claimed in claim 22 wherein said communication system further comprises a switch.

24. (Currently Amended) A subscriber station for a wireless local loop, comprising:

a radio operably connected between a modem and an antenna; and

a processor operably connected between said modem and at least two communications ports, said processor communicating with a base station via said radio to manage at least the allocation of data transmission capacity for a connection between said base station and at least one of said two communications ports,

wherein said processor is configured to communicate data transmission capacity requirements for a desired connection from either of said communication ports to said base station which evaluates said requirements before authorizing said connection, and

wherein said processor is also configured to communicate at least one quality of service requirement for said desired connection to said base station which evaluates said data transmission capacity and quality of service requirements before authorizing said connection.

25. (Currently Amended) The subscriber station as claimed in claim 24 wherein at least one of said two communications ports comprises ~~is~~ a telephony port and at least another of said at least two ports is a data port.

Claims 26-27. (Cancelled).

28. (Currently Amended) The subscriber station as claimed in ~~one of claims 26 and 27~~ claim 24 wherein said requirements are communicated by communicating the type of connection desired.

29. (Currently Amended) The subscriber station as claimed in ~~claim 26~~ claim 24 wherein said processor communicates to said base station data transmission capacity requirements and a higher level of a desired level of data transmission capacity requirements for said desired connection, and wherein said base station determines which level of data transmission capacity requirements at which to authorize establishment of said connection.

30. (Original) The subscriber station as claimed in claim 29 wherein after said connection has been authorized at said desired level of data transmission capacity requirements, said subscriber station receives instruction from said base station to decrease the data transmission capacity authorized for said connection to a level below said desired level but at least equal to said required level.

31. (Original) The subscriber station as claimed in claim 24 wherein said processor further prioritizes the authorization of connections by said base station.

32. (Currently Amended) The subscriber station as claimed in ~~claim 26~~ claim 31 wherein said prioritization is based upon which of said at least two communication ports said connection is being authorized for.

33. (Original) The subscriber station as claimed in claim 24 wherein data transmission capacity and quality of service requirements for a connection are determined by said subscriber station based upon the type of connection to be established.

34. (Original) The subscriber station as claimed in claim 33 wherein said determination includes

distinguishing between a desired voice connection and a desired data connection.

35. (Original) The subscriber station as claimed in claim 34 where for desired data connections, said determination further includes determining the type of data of said desired data connection.

36. (Original) The subscriber station as claimed in claim 35 wherein said type of data is determined by examining the internet protocol port to which said data is addressed.

Claims 37-45 (Cancelled).

46. (Original) The subscriber station as claimed in claim 23 wherein said subscriber station distinguishes between voice communications and facsimile or data communications at said telephony port.

47. (New) A subscriber station for a wireless local loop, comprising:

a radio operably connected between a modem and an antenna; and

a processor operably connected between said modem

and at least two communications ports, said processor communicating with a base station via said radio to manage at least the allocation of data transmission capacity for a connection between said base station and at least one of said two communications ports,

wherein said processor is configured to communicate a required level of data transmission capacity requirements for a desired connection from either of said communication ports to said base station which evaluates said requirements before authorizing said connection, and

wherein said processor is configured to communicate a higher desired level of data transmission capacity requirements for said desired connection to said base station which determines which level of data transmission capacity requirements at which to authorize establishment of said connection, and

wherein after said connection has been authorized at said desired level of data transmission capacity requirements, said subscriber station is configured to receive instruction from said base station to decrease the data transmission capacity authorized for said connection to a level below said desired level but at least equal to said required level.

48. (New) The subscriber station as claimed in claim 47 wherein at least one of said two communications

ports comprises a telephony port and at least another of said at least two ports comprises a data port..

49. (New) The subscriber station as claimed in claim 47 wherein said requirements are communicated by communicating the type of connection desired.

50. (New) The subscriber station as claimed in claim 47 wherein said processor also communicates at least one quality of service requirement for said desired connection to said base station which evaluates said data transmission capacity and quality of service requirements before authorizing said connection.

51. (New) The subscriber station as claimed in claim 50 wherein said requirements are communicated by communicating the type of connection desired.

52. (New) The subscriber station as claimed in claim 47 wherein said processor further prioritizes the authorization of connections by said base station.

53. (New) The subscriber station as claimed in claim 52 wherein said prioritization is based upon which of said at least two communication ports said connection is being authorized for.

54. (New) The subscriber station as claimed in claim 47 wherein data transmission capacity and quality of service requirements for a connection are determined by said subscriber station based upon the type of connection to be established.

55. (New) The subscriber station as claimed in claim 54 wherein said determination includes distinguishing between a desired voice connection and a desired data connection.

56. (New) The subscriber station as claimed in claim 55 where for desired data connections, said determination further includes determining the type of data of said desired data connection.

57. (New) The subscriber station as claimed in claim 56 wherein said type of data is determined by examining the internet protocol port to which said data is addressed.

58. (New) A subscriber station for a wireless local loop, comprising:

a radio operably connected between a modem and an antenna; and

a processor operably connected between said modem

and at least two communications ports, said processor communicating with a base station via said radio to manage at least the allocation of data transmission capacity for a connection between said base station and at least one of said two communications ports,

wherein data transmission capacity and quality of service requirements for a connection are determined by said subscriber station based upon the type of connection to be established,

wherein said determination includes distinguishing between a desired voice connection and a desired data connection,

wherein for desired data connections, said determination further includes determining the type of data of said desired data connection, and

wherein said type of data is determined by examining the internet protocol port to which said data is addressed.

59. (New) The subscriber station as claimed in claim 58 wherein at least one of said two communications ports comprises a telephony port and at least another of said at least two ports comprises a data port.

60. (New) The subscriber station as claimed in claim 58 wherein said processor communicates data

transmission capacity requirements for a desired connection from either of said communication ports to said base station which evaluates said requirements before authorizing said connection.

61. (New) The subscriber station as claimed in claim 60 wherein said requirements are communicated by communicating the type of connection desired.

62. (New) The subscriber station as claimed in claim 60 wherein said processor also communicates at least one quality of service requirement for said desired connection to said base station which evaluates said data transmission capacity and quality of service requirements before authorizing said connection.

63. (New) The subscriber station as claimed in claim 62 wherein said requirements are communicated by communicating the type of connection desired.

64. (New) The subscriber station as claimed in claim 58 wherein said processor communicates to said base station data transmission capacity requirements and a higher level of desired level of data transmission capacity requirements for said desired connection and said base station determines which level of data transmission capacity

requirements at which to authorize establishment of said connection.

65. (New) The subscriber station as claimed in claim 64 wherein after said connection has been authorized at said desired level of data transmission capacity requirements, said subscriber station receives instruction from said base station to decrease the data transmission capacity authorized for said connection to a level below said desired level but at least equal to said required level.

66. (New) The subscriber station as claimed in claim 58 wherein said processor further prioritizes the authorization of connections by said base station.

67. (New) The subscriber station as claimed in claim 66 wherein said prioritization is based upon which of said at least two communication ports said connection is being authorized for.

68. (New) A wireless local loop system comprising:

a network utilization manager;

at least one base station including an antenna, a radio, a modem and a communication system; and

a plurality of subscriber stations, each including

an antenna, a radio unit, and modem to exchange information with said at least one base station, at least two subscriber communications ports, and a subscriber utilization client operable with said network utilization manager to assign capacity in said system to at least one of said two subscriber communications ports to create a desired connection between said base station and said at least one subscriber communication port,

wherein each said subscriber station requests said network utilization manager to establish a connection to said at least one subscriber communication port, said network utilization manager determining a required data rate for said connection from said request, and

wherein said network utilization manager further determines both at least one QoS level required for said connection and at least one QoS level desired for said connection from said request.

69. (New) The wireless local loop system as claimed in claim 68 wherein said network utilization manager determines both a required data rate and a desired data rate from said request.

70. (New) The wireless local loop system as claimed in claim 69 wherein monetary charges associated with said connection differ according to whether said connection

is established at said required data rate or said desired data rate.

71. (New) The wireless local loop system as claimed in claim 68, wherein said base station is connected to a public switched telephone network via a PSTN gateway.

72. (New) The wireless local loop system as claimed in claim 71 wherein said base station is connected to said PSTN gateway via a backhaul connection.

73. (New) The wireless local loop system as claimed in claim 68 wherein at least one of said at least two subscriber communications ports comprises a data communication port.

74. (New) The wireless local loop system as claimed in claim 73, wherein data communication port comprises an Ethernet port.

75. (New) The wireless local loop system as claimed in claim 73, wherein said data communication port comprises a radio port for communication with radio-enabled devices adjacent said subscriber station.

76. (New) The wireless local loop system of

claim 73 comprising at least two telephony ports in addition to said data port.

77. (New) The wireless local loop system of claim 76 wherein one of said at least two telephony ports comprises a data port for data modulated in the voice band.

78. (New) The wireless local loop system as claimed in claim 68 including a prioritization table for at least one of said plurality of subscriber stations, and at least one of said subscriber utilization client in said subscriber station and said network utilization manager employing said prioritization table when assigning capacity to said at least one subscriber communications port in said at least one subscriber station.

79. (New) The wireless local loop system as claimed in claim 78, wherein information in said prioritization table is downloaded to said subscriber station from said base station.

80. (New) The wireless local loop system as claimed in claim 68 including at least two base stations and wherein said network utilization manager is implemented in a distributed manner on at least two of said at least two base stations.

81. (New) The wireless local loop system as claimed in claim 68 wherein said communication system comprises a router.

82. (New) The wireless local loop system as claimed in claim 81 wherein said base station comprises at least two sectors, each sector including an antenna, a radio, a modem, and wherein said antenna is directional to define a reception footprint for each respective sector substantially different from the reception footprint of each other sector, each sector communicating with said router, and wherein said network utilization manager manages and assigns resources on a per sector basis.

83. (New) The wireless local loop system as claimed in claim 81 wherein said communication system further comprises a switch.

84. (New) The wireless local loop system as claimed in claim 83, wherein said switch and router in said base station are connected to a packet network via a backhaul connection.

85. (New) The wireless local loop system as claimed in claim 84 and further including at least one

network management center connected to said at least one base station via said backhaul, said network utilization manager being implemented in a distributed manner on said network management center and said at least one base station.

86. (New) The wireless local loop system as claimed in claim 83 herein said switch and router are operable to establish connections between subscriber stations serviced by the same base station.

87. (New) The subscriber station as claimed in claim 68 wherein said subscriber station distinguishes between voice communications and facsimile or data communications at said telephony port.

88. (New) A wireless local loop system comprising:

a network utilization manager;

at least one base station including an antenna, a radio, a modem, and a communication system;

a plurality of subscriber stations, each including an antenna, a radio unit, and modem to exchange information with said at least one base station, at least two subscriber communications ports and a subscriber utilization client operable with said network utilization manager to assign capacity in said system to at least one of said two

subscriber communications ports to create a desired connection between said base station and said at least one subscriber communication port; and

a prioritization table for at least one of said plurality of subscriber stations, and at least one of said subscriber utilization client in said subscriber station and said network utilization manager employing said prioritization table when assigning capacity to said at least one subscriber communications port in said at least one subscriber station, and

wherein information in said prioritization table is downloaded to said subscriber station from said base station.

89. (New) The wireless local loop system as claimed in claim 88 wherein each said subscriber station requests said network utilization manager to establish a connection to said at least one subscriber communication port, said network utilization manager determining a required data rate for said connection from said request.

90. (New) The wireless local loop system as claimed in claim 89 wherein said network utilization manager determines both a required data rate and a desired data rate from said request.

91. (New) The wireless local loop system as

claimed in claim 90 wherein monetary charges associated with said connection differ according to whether said connection is established at said required data rate or said desired data rate.

92. (New) The wireless local loop system as claimed in claim 89 wherein said network utilization manager further determines at least one QoS level required for said connection.

93. (New) The wireless local loop system as claimed in claim 89 wherein said network utilization manager further determines both at least one QoS level required for said connection and at least one QoS level desired for said connection from said request.

94. (New) The wireless local loop system as claimed in claim 93 wherein monetary charges associated with said connection differ according to whether said connection is established at said at least one required QoS level or said at least one desired QoS level desired for said connection.

95. (New) The wireless local loop system as claimed in claim 89, wherein said base station is connected to a public switched telephone network via a PSTN gateway.

96. (New) The wireless local loop system as claimed in claim 95 wherein said base station is connected to said PSTN gateway via a backhaul connection.

97. (New) The wireless local loop system as claimed in claim 89 wherein at least one of said at least two subscriber communications ports comprises a data communication port.

98. (New) The wireless local loop system as claimed in claim 97, wherein data communication port comprises an Ethernet port.

99. (New) The wireless local loop system as claimed in claim 97, wherein said data communication port comprises a radio port for communication with radio-enabled devices adjacent said subscriber station.

100. (New) The wireless local loop system of claim 97 comprising at least two telephony ports in addition to said data port.

101. (New) The wireless local loop system of claim 100 wherein one of said at least two telephony ports comprises a data port for data modulated in the voice band.

102. (New) The wireless local loop system as claimed in claim 88 including at least two base stations, and wherein said network utilization manager is implemented in a distributed manner on at least two of said at least two base stations.

103. (New) The wireless local loop system as claimed in claim 88 wherein said communication system comprises a router.

104. (New) The wireless local loop system as claimed in claim 103 wherein said base station comprises at least two sectors, each sector including an antenna, a radio, a modem, and wherein said antenna is directional to define a reception footprint for each respective sector substantially different from the reception footprint of each other sector, each sector communicating with said router, and wherein said network utilization manager manages and assigns resources on a per sector basis.

105. (New) The wireless local loop system as claimed in claim 103 wherein said communication system further comprises a switch.

106. (New) The wireless local loop system as

claimed in claim 105, wherein said switch and router in said base station are connected to a packet network via a backhaul connection.

107. (New) The wireless local loop system as claimed in claim 106 and further including at least one network management center connected to said at least one base station via said backhaul, said network utilization manager being implemented in a distributed manner on said network management center and said at least one base station.

108. (New) The wireless local loop system as claimed in claim 105 herein said switch and router are operable to establish connections between subscriber stations serviced by the same base station.

109. (New) The wireless local loop system as claimed in claim 68 wherein monetary charges associated with said connection differ according to whether said connection is established at said at least one required QoS level or said at least one desired QoS level desired for said connection.

110. (New) The wireless local loop system as claimed in claim 109 wherein said network utilization manager determines both a required data rate and a desired data rate

from said request.

111. (New) The wireless local loop system as claimed in claim 110 wherein monetary charges associated with said connection differ according to whether said connection is established at said required data rate or said desired data rate.

112. (New) The wireless local loop system as claimed in claim 109 wherein said base station is connected to a public switched telephone network via a PSTN gateway.

113. (New) The wireless local loop system as claimed in claim 112 wherein said base station is connected to said PSTN gateway via a backhaul connection.

114. (New) The wireless local loop system as claimed in claim 109 wherein at least one of said at least two subscriber communications ports comprises a data communication port.

115. (New) The wireless local loop system as claimed in claim 114, wherein data communication port comprises an Ethernet port.

116. (New) The wireless local loop system as

claimed in claim 114, wherein said data communication port comprises a radio port for communication with radio-enabled devices adjacent said subscriber station.

117. (New) The wireless local loop system of claim 114 comprising at least two telephony ports in addition to said data port.

118. (New) The wireless local loop system of claim 117 wherein one of said at least two telephony ports comprises a data port for data modulated in the voice band.

119. (New) The wireless local loop system as claimed in claim 109 including a prioritization table for at least one of said plurality of subscriber stations, and at least one of said subscriber utilization client in said subscriber station and said network utilization manager employing said prioritization table when assigning capacity to said at least one subscriber communications port in said at least one subscriber station.

120. (New) The wireless local loop system as claimed in claim 119, wherein information in said prioritization table is downloaded to said subscriber station from said base station.

121. (New) The wireless local loop system as claimed in claim 109 including at least two base stations and wherein said network utilization manager is implemented in a distributed manner on at least two of said at least two base stations.

122. (New) The wireless local loop system as claimed in claim 109 wherein said communication system comprises a router.

123. (New) The wireless local loop system as claimed in claim 122 wherein said base station comprises at least two sectors, each sector including an antenna, a radio, a modem, and wherein said antenna is directional to define a reception footprint for each respective sector substantially different from the reception footprint of each other sector, each sector communicating with said router, and wherein said network utilization manager manages and assigns resources on a per sector basis.

124. (New) The wireless local loop system as claimed in claim 122 wherein said communication system further comprises a switch.

125. (New) The wireless local loop system as claimed in claim 124, wherein said switch and router in said

base station are connected to a packet network via a backhaul connection.

126. (New) The wireless local loop system as claimed in claim 125 and further including at least one network management center connected to said at least one base station via said backhaul, said network utilization manager being implemented in a distributed manner on said network management center and said at least one base station.

127. (New) The wireless local loop system as claimed in claim 124 herein said switch and router are operable to establish connections between subscriber stations serviced by the same base station.

128. (New) The subscriber station as claimed in claim 109 wherein said subscriber station distinguishes between voice communications and facsimile or data communications at said telephony port.